

U.S. Patent Application Serial No. 10/566,273
Response filed March 23, 2010
Reply to OA dated December 28, 2009

REMARKS

Claims 4 and 15 are currently pending in the subject application. Claims 4 and 15 have been amended herein in order to more particularly point out and distinctly claim subject matter. The Applicants respectfully submit that no new matter has been added. It is believed that this paper is fully responsive to the Office Action dated December 28, 2009.

1. The Examiner has objected to claim 4 because of an informality.

Claim 4 has been amended herein, in a manner intended to remove this informality. Accordingly, Applicants respectfully submit that this objection should be withdrawn.

2. The Examiner has rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over US Patent 5,554,015 to Dreiman et al (**Dreiman**) in view of US Patent 5,937,817 to Schanz et al. (**Schanz**) and US Patent 5,582,271 to Mielo (**Mielo**).

Applicants respectfully traverse this rejection of claim 4, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the combination of features as set forth in claim 4 of the subject application.

U.S. Patent Application Serial No. 10/566,273
Response filed March 23, 2010
Reply to OA dated December 28, 2009

To clarify aspects regarding the compressor, claim 4 has been amended as follows:

A compressor comprising:

a container[[,]];

a compressor mechanism, disposed inside said container and ~~which is~~ disposed in a lower portion of said container, for compressing working fluid,

a motor comprising a stator and a rotor, disposed inside said container and ~~which is~~ disposed in an upper portion of said container, for driving said compressor mechanism by the rotation of the rotor[[,]];

a discharge pipe, ~~which is~~ disposed in an upper space of [[the]] said container, for discharging the compressed working fluid[[,]];

an oil reservoir, ~~which is~~ provided at a bottom of said container, for storing refrigeration oil[[,]].

To clarify aspects regarding “a floating type wave-suppressing member,” claim 4 has been amended as follows:

“a floating type wave-suppressing member, floated ~~is provided~~ in an interface between the working fluid and the refrigeration oil of said reservoir, for reducing the area of said interface which comes into direct contact with the turning flow of the working fluid generated by the rotation of the rotor.”

U.S. Patent Application Serial No. **10/566,273**
Response filed March 23, 2010
Reply to OA dated December 28, 2009

The combination of features as set forth in the subject application serve to, among other things, prevent oil from being mixed into working oil by providing a wave-suppressing member in an interface of oil, and by suppressing the ripple.

The compressor as set forth in the subject application does not have a structure for generating cavitation in the oil reservoir, and this problem does not occur: surging caused by bubbles mixed into oil.

To solve the above problem and other problems, an aspect of the compressor as set forth in the subject application includes the following structure:

“a floating type wave-suppressing member, floated in an interface between the working fluid and the refrigeration oil of said reservoir, for reducing the area of said interface which comes into direct contact with the turning flow of the working fluid generated by the rotation of the rotor,

wherein said wave-suppressing member comprises a divided member which extends astride said interface to divide said interface into a plurality of pieces, wherein said divided member comprises a plurality of plates standing in the vertical direction and portions of said plates are always immersed in the refrigeration oil of said reservoir, wherein a plurality of said plates are assembled in a lattice form.”

Also, to solve the above problem and other problems, an aspect of the compressor as set forth

in the subject application includes the following structure:

“a floating type wave-suppressing member, floating in an interface between the working fluid and the refrigeration oil of said reservoir, for reducing the area of said interface which comes into direct contact with the turning flow of the working fluid generated by the rotation of the rotor;

wherein said wave-suppressing member comprises a divided member which extends astride said interface to divide said interface into a plurality of pieces, wherein said divided member comprises a mesh member and portions of said mesh member area are always immersed in the refrigeration oil of said reservoir.”

With the structure as set forth in the subject application, the wave-suppressing member can move to follow the variation of an oil amount, and the wave-suppressing member is always located on the oil surface. Because of the structure as set forth in the subject application, oil from the reservoir will be prevented from being torn by the turning flow.

Dreiman discloses a structure of a compressor in which a compressor mechanism is disposed in a container 22.

Schanz discloses a dry sump oil cooling and de-aeration system for an internal combustion engine. As described in line 15 to 22 of column 6 of **Schanz**, a plurality of deflection walls 130 provided within the cavity 126 are depended from the top wall 106 or the sidewall 110, or both, a

serpentine path is formed in the cavity to increase residence time of oil.

In the baffle 102 disclosed in **Schanz**, the serpentine path which allows oil to flow into the reservoir 16 is formed to increase the residence time of oil. To this end, it is necessary that the baffle 102 is held firmly against the reservoir 16 as described in lines 29 to 38 of column 6 of **Schanz**.

Therefore, the top wall 106 of the baffle 102 is not varied in accordance with variation in an oil amount. The baffle 102 cools and removes bubbles while oil passes through the serpentine path in the cavity, and the object of **Schanz** is different from that of the present application.

Further, **Schanz** is not based on the problem that oil surface is rippled by the turning flow.

Therefore, in view of the above, a person skilled in the art would not combine **Dreiman** and **Schanz** with each other.

Mielo discloses a structure that flow of oil that flows into a tank from a pipe 5 is leveled by “leveling means” that floats on an oil surface, air bubbles that float up from the tank are leveled while the bubbles pass through a lath, and the bubbles that float up from the tank are eliminated while the bubbles pass through the lath (lattice structures) possessed by the “leveling means.” It is

U.S. Patent Application Serial No. **10/566,273**
Response filed March 23, 2010
Reply to OA dated December 28, 2009

an object of **Mielo** to send, substantially in the vertical direction, the bubbles entered between the laths.

However, in the case of a compressor in which a compressor mechanism is provided in a container as in the subject application and **Dreiman**, it is clear that a pressure in the container becomes higher than the atmospheric pressure. Therefore, if the tank of **Mielo** is disposed under high pressure, air bubbles are less prone to rise up, and the function of the laths (lattice structures) cannot be exhibited.

Therefore, in view of above, a person skilled in the art would not combine **Dreiman** and **Mielo** with each other.

In view of the above, it would not have been obvious to one of ordinary skill in the art to combine and modify the teachings of **Dreiman**, **Schanz**, and **Mielo** in the manner suggested by the Examiner. Thus, a person of ordinary skill in the art would not have arrived at the Applicants' claimed combination of features.

Furthermore, even if, *arguendo*, the Examiner's proposed combination and modifications were attempted, the result would still fall far short of the combination of features as set forth in claim

4. Thus, a person of ordinary skill in the art would not have arrived at the Applicants' claimed combination of features.

The U.S. Patent and Trademark Office has the burden of proof to show that an applicant is not entitled to a patent if the claimed subject matter is anticipated by, or is obvious from, the art of record. A patent applicant is entitled to a patent unless the U.S. Patent and Trademark Office establishes otherwise.

Dreiman, Schanz, and Mielo, alone or in combination, fail to describe, teach, or suggest the following features as set forth in claim 4, as amended: "a container; a compressor mechanism, disposed inside said container and disposed in a lower portion of said container, for compressing working fluid, a motor comprising a stator and a rotor, disposed inside said container and disposed in an upper portion of said container, for driving said compressor mechanism by the rotation of the rotor; a discharge pipe, disposed in an upper space of said container, for discharging the compressed working fluid; an oil reservoir, provided at a bottom of said container, for storing refrigeration oil; and a floating type wave-suppressing member, floated in an interface between the working fluid and the refrigeration oil of said reservoir, for reducing the area of said interface which comes into direct contact with the turning flow of the working fluid generated by the rotation of the rotor; wherein said wave-suppressing member comprises a divided member which extends astride said interface to divide said interface into a plurality of pieces, wherein said divided member comprises a plurality

U.S. Patent Application Serial No. **10/566,273**
Response filed March 23, 2010
Reply to OA dated December 28, 2009

of plates standing in the vertical direction and portions of said plates are always immersed in the refrigeration oil of said reservoir, wherein a plurality of said plates are assembled in a lattice form.”

In view of all of the foregoing, it is respectfully submitted that essential elements of a *prima facie* case of obviousness are missing. That is, the Examiner has not yet established a *prima facie* case of obviousness. But it is the burden of the Examiner to do so.

Accordingly, in view of the above, Applicants respectfully submit that this rejection of claim 4 should be withdrawn.

3. The Examiner has rejected claim 15 under 35 U.S.C. 103(a) as being unpatentable over Dreiman in view of Schanz and Mielo, and further in view of JP 2002-239311 to Inoue.

Applicants respectfully traverse this rejection of claim 15, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the combination of features as set forth in claim 15 of the subject application.

To clarify aspects regarding the compressor, claim 15 has been amended herein as follows:

A compressor comprising:

U.S. Patent Application Serial No. 10/566,273
Response filed March 23, 2010
Reply to OA dated December 28, 2009

a container[[,]];
a compressor mechanism, disposed inside said container and ~~which is~~ disposed in a lower portion of said container, for compressing working fluid,
a motor comprising a stator and a rotor, disposed inside said container and ~~which is~~ disposed in an upper portion of said container, for driving said compressor mechanism by the rotation of the rotor[[,]];
a discharge pipe, ~~which is~~ disposed in an upper space of [[the]] said container, for discharging the compressed working fluid[[,]];
an oil reservoir, ~~which is~~ provided at a bottom of said container, for storing refrigeration oil[[,]].

To clarify aspects regarding “a floating type wave-suppressing member,” claim 15 has been amended herein as follows:

“a floating type wave-suppressing member, floated ~~is provided~~ in an interface between the working fluid and the refrigeration oil of said reservoir, for reducing the area of said interface which comes into direct contact with the turning flow of the working fluid generated by the rotation of the rotor.”

Inoue discloses a device that filters paste of high viscosity using a mesh screen and a stirring blade that rotates above the screen. Paragraph [0019] of **Inoue** is cited and relied upon by the

U.S. Patent Application Serial No. **10/566,273**
Response filed March 23, 2010
Reply to OA dated December 28, 2009

Examiner (Office Action dated December 28, 2009, page 4, paragraph 8). It is described in paragraph [0019] of **Inoue** that when the paste passes through the mesh, air bubbles in the paste are crushed and the bubbles are eliminated.

As described above, the mesh disclosed in **Inoue** is clearly different from “a floating type wave-suppressing member” of the subject application in terms of object. Therefore, a person skilled in the art would not combine the cited documents based on the description in **Inoue**.

As described above, a person skilled in the art cannot arrive at the combination of features as set forth in the subject application from the Examiner’s proposed combinations of the cited documents.

In view of the above, it would not have been obvious to one of ordinary skill in the art to combine and modify the teachings of **Dreiman, Schanz, Mielo, and Inoue** in the manner suggested by the Examiner. Thus, a person of ordinary skill in the art would not have arrived at the Applicants’ claimed combination of features.

Furthermore, even if, *arguendo*, the Examiner’s proposed combination and modifications were attempted, the result would still fall far short of the combination of features as set forth in claim 15. Thus, a person of ordinary skill in the art would not have arrived at the Applicants’ claimed

U.S. Patent Application Serial No. **10/566,273**
Response filed March 23, 2010
Reply to OA dated December 28, 2009

combination of features.

The U.S. Patent and Trademark Office has the burden of proof to show that an applicant is not entitled to a patent if the claimed subject matter is anticipated by, or is obvious from, the art of record. A patent applicant is entitled to a patent unless the U.S. Patent and Trademark Office establishes otherwise.

Dreiman, Schanz, Mielo, and Inoue, alone or in combination, fail to describe, teach, or suggest the following features as set forth in claim 15, as amended: “a container; a compressor mechanism, disposed inside said container and disposed in a lower portion of said container, for compressing working fluid, a motor comprising a stator and a rotor, disposed inside said container and disposed in an upper portion of said container, for driving said compressor mechanism by the rotation of the rotor; a discharge pipe, disposed in an upper space of said container, for discharging the compressed working fluid; an oil reservoir, provided at a bottom of said container, for storing refrigeration oil; and a floating type wave-suppressing member, floated in an interface between the working fluid and the refrigeration oil of said reservoir, for reducing the area of said interface which comes into direct contact with the turning flow of the working fluid generated by the rotation of the rotor; wherein said wave-suppressing member comprises a divided member which extends astride said interface to divide said interface into a plurality of pieces, wherein said divided member comprises a mesh member and portions of said mesh member are always immersed in the

U.S. Patent Application Serial No. **10/566,273**
Response filed March 23, 2010
Reply to OA dated December 28, 2009

refrigeration oil of said reservoir.”

In view of all of the foregoing, it is respectfully submitted that essential elements of a *prima facie* case of obviousness are missing. That is, the Examiner has not yet established a *prima facie* case of obviousness. But it is the burden of the Examiner to do so.

Accordingly, in view of the above, Applicants respectfully submit that this rejection of claim 15 should be withdrawn.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicants’ undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

U.S. Patent Application Serial No. **10/566,273**
Response filed March 23, 2010
Reply to OA dated December 28, 2009

In the event that this paper is not timely filed, the Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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